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NOTICE OF ALLOWANCE AND FEE(S) DUE

278

7590

11/17/2008

MICHAEL J. STRIKER
103 EAST NECK ROAD
HUNTINGTON, NY 11743

EXAMINER

LE, JOHN H

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 11/17/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,371	04/09/2007	Enis Erasec	3827	6025

TITLE OF INVENTION: METHOD FOR LOCATING FLAWS, AND A MARKING SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	02/17/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

278 7590 11/17/2008

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	02/17/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
LE, JOHN H	2863	702-035000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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278	7590	11/17/2008	EXAMINER	
MICHAEL J. STRIKER 103 EAST NECK ROAD HUNTINGTON, NY 11743			LEE, JOHN II	
			ART UNIT	PAPER NUMBER

2863

DATE MAILED: 11/17/2008

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/589,371

Applicant(s)

ERSUE ET AL.

Examiner

JOHN H. LE

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/23/2008.
2. ☒ The allowed claim(s) is/are 13-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/John H Le/
Primary Examiner, Art Unit 2863

Response to Amendment

1. Applicant's amendment filed 09/23/2008 has been entered and carefully considered.

The specification has been amended.

Claims 1-12 have been cancelled.

Claims 13-20 have been added.

Reasons for Allowance

2. Claims 13-20 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The combination as claimed wherein determining at least one location of the at least one feature on the surface of the three-dimensional object from the at least one picture using design data related to the object, optical imaging properties of the at least one optical image-taking device, and a position of the at least one optical image-taking device and a position of the object when the at least one picture is taken; determining a start path traversable by the marking device from the design data related to the object, from position data and from previously- defined, permissible areas of movement of the marking device; wherein the at least one optical image-taking device, the object and at least one of respective displacement devices for moving the at least one optical image-taking device, the object, and the marking device are three-dimensionally calibrated to each other (claim 13) is not disclosed, suggested, or made obvious by the prior art of record.

The combination as claimed wherein said marking controller automatically assigns at least one location of at least one of the flaws to at least one of the marking heads according to design data for the object, said marking controller controls the displacement devices to position said at least one of said marking heads at said at least one location of said at least one flaw based on said design data related to the object and transmitted position data related to said at least one location of said at least one flaw and said marking controller determines a start path for the marking device from said design data related to the object, from position data and from previously-defined, permissible areas of movement of the marking device (claim 19) is not disclosed, suggested, or made obvious by the prior art of record.

Alders et al (US 6,320,654 B1) discloses a system for detecting selected surface defects of a object body shell 2 comprising a sensor system 27, an optical measuring device 4, a computer system 5, and a marking system 32. The optical measuring device 4 comprises a projection device formed by radiation emitters 11, 13, 16, and 19 that generate a light tunnel or light curtain 23 that produces a specific grid pattern of lighter and darker grid pattern points on a measuring strip 24 on the surface of the body shell 2. CCD cameras 12, 14, 17 and 20 record the light 25 reflected from the surface from the body shell 2 as an image of the grid points at a specific angle and emit a corresponding test signal that is transmitted to the computer system 5. Surface defects requiring reworking are determined in the computer system 5 using state-of-the-art triangulations methods, wherein the computer system recognizes the surface unevenness on the basis of the test signal (see column 7, line 52 to column 8, line 62).

Kivba (US 5,716,262) discloses a defect polishing robot 1 comprising a polishing head for eliminating paint surface defects by polishing up to a certain predetermined number and a marking head 3 for marking excess paint surface defects for later processing. The robot 1 has a robot arm 2 provided at its end with a surface inspection apparatus 4 directly secured thereto, and a marking head 3, which is attached to another arm 9b of the L-shaped mounting bracket 9. The robot arm 2 is further provided at the end with a reversible motor 10 with a vertically oriented center axis of rotation, which turns a mounting bracket 9 in both directions through an angle of 90 degrees around the center axis of rotation of the motor 10. This alternately places the marking head 3 or the polishing head 5 in a working position. The surface defect inspection apparatus 4 includes an image pick-up device such as a CCD camera 6 and a light source 8 mounted within a lamp house or housing 7. The CCD camera 6 takes a picture of an illuminated surface of a subject work, such as a painted vehicle body B, on a charge coupled device (CCD). In operation, the polishing robot 1 acts to inspection for and eliminate paint defects. The surface inspection apparatus 4 picks up an image of a circular unit area having a diameter of, for instance, approximately 50 mm of the painted surface and processes data representative of the image so as to detect and locate paint defects, grade the defects and determine their positions in an X-Y perpendicular coordinate system. Based on the position data of these paint defects, the polishing robot 1 operates the robot arm 2.

Larsson et al (US Patent 6,667,800 B1) discloses a method and apparatus for measuring and quantifying surface finishing defects, such as defects on polished

surfaces, by means of optical registration with subsequent image analysis and processing. Figure 1 of Larsson, et al, shows a test surface 2, which is illuminated with parallel light from a first spot lighting source 3 and, at the same time, camera 4 records a first image of the test surface 2. Thereafter, the first spot lighting source 3 is switched off and a second spot lighting source 5, adjacent to and parallel to the first spot lighting spot 3, illuminates the test surface 2 and, at the same time, camera 4 records a second image of the test surface 2. After that, first and second images are transferred to a central unit 7 that includes image analysis functions and control functions. In unit 7, the second image is subtracted from the first image (or vice versa) in order to provide a difference image. In the difference image, surface defects, such as polishing roses, appear with a certain intensity corresponding to the degree of severity of the surface defects being analyzed.

Shimbara (US Patent 5,625,197) discloses a method of determining a time at which an image of illuminated surface area is read in for image processing to detect surface defects. In the method of Shimbara a painted vehicle body 1, which is placed on a truck 11 moving at a specified speed in a lengthwise travel direction A toward an inspection station 3. The inspection station 3 comprises work sensors 7 and 13. Work sensor 7 detects when the vehicle body 1 is placed in a specific reference position in the inspection station 3 and work sensor 13 detects a transverse displacement of the vehicle body 1. Data from these work sensors 7 and 13 are used to determine the position and speed of the vehicle body 1 within the inspection station 3 using a complicated procedure (column 3, line 61 to column 4, line 21 of Shimbara). In the

vehicle manufacturing line, the image pick-up device 9 starts to pick up images of the surface of the painted vehicle body 1 after the work sensor 7 detects the painted vehicle body 1 and provides a signal (see column 4, line 58, to column 5, line 14). In order to pick up images with the image pick-up device 9, a surface light source provides a fixed area of illumination incident upon the surface of the vehicle body 1 at a specified incident angle so as to illuminate at least a part of the body surface covered within the field of view of each image pick-up device 9. Since the vehicle body 1 is transported at a constant speed in the travel direction A, the area illumination scans over the entire surface of the vehicle body 1 from the front and to the rear end. With this procedure, the entire surface of the vehicle body 1 is spatially divided into a plurality of lengthwise sections having a lengthwise width corresponding to the scanning interval. Images of these sections are read into an image processing unit 12. Shimbara discloses a method for handling changes in the width of an illuminated area on a surface that is being inspected even though a specified area of illumination is given at which light strikes the surface. This change occurs due to unevenness of subject surface. In order to determine a scanning interval at which a subject surface is scanned without any omission of image reading, the picture elements are transformed into two-valued image data and represented by rectangular coordinates along an X-axis a perpendicular Y-axis direction.

However, Alders et al, Kivba, Larsson et al, and Shimbara do not disclose wherein determining at least one location of the at least flaw on the surface of the three-dimensional object from the at least one picture using design data related to the object,

optical imaging properties of the at least one optical image-taking device, and a position of the at least one optical image-taking device and a position of the object when the at least one picture is taken; determining a start path traversable by the marking device from the design data related to the object, from position data and from previously-defined, permissible areas of movement of the marking device; wherein the at least one optical image-taking device, the object and at least one of respective displacement devices for moving the at least one optical image-taking device, the object, and the marking device are three-dimensionally calibrated to each other. Alders et al, Kivba, Larsson et al, and Shimbara also do not disclose wherein said marking controller automatically assigns at least one location of at least one of the flaws to at least one of the marking heads according to design data for the object, said marking controller controls the displacement devices to position said at least one of said marking heads at said at least one location of said at least one flaw based on said design data related to the object and transmitted position data related to said at least one location of said at least one flaw and said marking controller determines a start path for the marking device from said design data related to the object, from position data and from previously-defined, permissible areas of movement of the marking device.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN H. LE whose telephone number is (571) 272-2275. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John H Le/
Primary Examiner, Art Unit 2863
November 17, 2008